



**INSTITUT TEKNOLOGI SEPULUH NOPEMBER  
FACULTY OF SCIENCE AND DATA ANALYTICS  
DEPARTMENT OF STATISTICS  
STATISTICS UNDERGRADUATE PROGRAM**

Course	Course Name	:	<b>Time Series Econometrics</b>
	Course Code	:	SS234749
	Credit	:	3 SKS
	Semester	:	VII

**COURSE DESCRIPTION**

Econometrics is a course in the field of economic and financial statistics. The purpose of this course is to be able to apply statistical methods in the field of economics. In this course, students will learn about econometric methodology in research which includes making model specifications, estimating models, evaluating the results of model estimates, and evaluating forecasting power. The econometric models discussed include single equations, SUR, as well as both static and dynamic simultaneous equations with applications in micro and macro economics. In this lecture, case studies will also be presented to evaluate the results of other people's research, as well as econometric modeling so that they can be used as tools in decision making to solve problems in real cases.

**PROGRAM LEARNING OUTCOME**

- PLO-4 Able to apply science and mathematics to support the understanding of statistical methods.
- PLO-9 Able to apply statistical methods to analyze theoretical and real problems
- PLO-10 Able to apply business, industrial, economic, social, health or environmental statistical methods to real problems

**COURSE LEARNING OUTCOME**

- CLO.1 Understand economic terms and provide an understanding of the basic understanding and concepts of economics
- CLO.2 Able to explain economic theory (micro and macro) verbally, graphically, and mathematically
- CLO.3 Able to apply economics to analyze data in their field of work with appropriate statistical methods
- CLO.4 Able to identify and formulate problems in their field of work into an economic model to solve problems
- CLO.6 Have knowledge of current and future issues related to the economic sector (micro and macro)
- CLO.7 Able to communicate effectively and work together in interdisciplinary and multidisciplinary teams
- CLO.8 Having professional responsibility and ethics
- CLO.9 Able to motivate yourself to think creatively and learn throughout life

**MAIN SUBJECT**

1. Definition and scope of time series econometrics
2. Modeling economic phenomena using the SUR equation system approach

3. Modeling economic phenomena using the Simultaneous system of equations approach
4. Case study
5. Concept of forming the ARIMAX model
6. Concept of forming the VAR model
7. Concept of forming the GSTAR model

**PREREQUISITE**

Regression Analysis, Introduction to Econometrics, Introduction to Time Series Analysis

**REFERENCES**

1. Greene, William H. 2007. Econometric Analysis. 6th edition. Englewood Cliffs, N. J. : Prentice Hall.
2. Gujarati. 2008. Basic Econometrics. 4th edition. McGraw-Hill Companies.
3. Kmenta, J. 1986. Elements of Econometrics. 2d edition. New York: Macmillan.
4. Lutkepohl, H and Kratzig M. 2004. Applied Time Series Econometrics. First edition. Cambridge University Press.
5. Neusser K. 2016. Time Series Econometrics. Springer International Publishing Switzerland.